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FROM THE EDITOR

The study of the global carbon cycle is not just an academic exercise anymore—such studies could lead to emissions control policies throughout the world. Quantitative work on the CO_2 greenhouse effect began over a century ago (1896, actually) with the Swedish physical chemist Svante Arrhenius. Although the idea had been around for a while, Arrhenius first calculated that doubling the Earth's atmospheric CO_2 would raise its atmospheric temperature 5–6°C. These calculations were simplistic by modern standards, but the idea is still considered valid by most atmospheric scientists. It is now recognized that the Earth's carbon cycle involves dynamic interactions of the atmosphere with the oceans and biosphere. On a geological time scale, carbonate sediments regulate the CO_2; on a human cultural time scale, the oceans play an important role in buffering the anthropogenic atmospheric CO_2. Inasmuch as the oceanographic papers in this issue deal with how radiocarbon contributes to our understanding of this part of the carbon cycle, they are relevant to the issue of the CO_2 greenhouse effect, and further our quantitative understanding of the carbon cycle through the global radioactive tracer experiment now underway.

This Oceanographic Issue is not exclusively about oceans. We also present a paper suggesting that ENSO may be detected by high-precision radiocarbon measurements, as well as a note on correcting varve counts using radiocarbon dating.

Finally, readers concerned with the production and use of high-precision calibrated radiocarbon dates should take note of the workshop report herein. As is the case for all human endeavors, perfection is a goal, not a state of being.

Austin Long